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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/415,901	10/08/1999	NITIN VAIDYA	1018.051US1	5437

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EXAMINER

RYMAN, DANIEL J

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/415,901

Applicant(s)

VAIDYA ET AL.

Examiner

Daniel J. Ryman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 52-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 52-57, 59-64, and 66 is/are rejected.
- 7) ☒ Claim(s) 58 and 65 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7/2/2004 have been fully considered but they are not persuasive. In the Response, Applicant argues that the new claims overcome the Yang reference because Yang discloses that the start tag of the received packet is based on the parameters (start time and finish time) of the previously transmitted packet while the claims disclose that the start time (tag) of the received packet is based on the parameters (start time and finish time) of a previously received packet. Examiner notes that the previously transmitted packet of Yang is also a previously received packet. Since the claims only specify that the start tag of the received packet is based on the parameters of "a previously received packet", but do not specify on which previously received packet the parameters should be based, Examiner maintains that, as broadly defined, Yang reads on the new claims, as is outlined below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 53 and 60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 53 and 60 discloses that the virtual clock "is continually updated whenever a packet is transmitted on the node". Examiner is confused as to how a clock is continually updated at specific points in time (whenever a packet is transmitted). If the clock is continually updated then the updates should not occur at a specific point in time. In a similar vein, if the

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clock is updated at specific points in time, then the clock updates are not continuous. For the purposes of prior art rejections, Examiner will interpret “is continually updated whenever a packet is transmitted on the node” as “is updated whenever a packet is transmitted on the node”.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 52-56, 59-63, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al (USPN 5,905,730) in view of Tout et al (USPN 5,991,295)

7. Regarding claims 52, 59, and 66, Yang discloses a method for fair scheduling and a system for fair scheduling, the method comprising the steps of and the system comprising means for: receiving a packet at a node (col. 2, lines 22-36 and col. 5, lines 1-5) where it is implicit that the packet is generated using an application; assigning a start time to the received packet in a controller (scheduler) (col. 2, lines 22-36 and col. 5, lines 1-27), the start time based, at least in part, on a maximum of a time measured by a virtual clock when the packet was received and a finish time of a previously received packet (col. 2, lines 22-36 and col. 5, lines 1-27) where the previously transmitted packet is, as broadly defined, a previously received packet, wherein the finish time is based, at least in part, on a start time of the previously received packet (col. 2, lines 22-36 and col. 5, lines 1-27); and transmitting the received packet at a time based, at least in part, on the assigned start time (col. 2, lines 22-36 and col. 5, lines 1-27).

Yang does not expressly disclose that the start time and finish time comprise tags. Tout teaches using internal tags, within a switch, where a switch is a network device which uses scheduling, to attach to a packet any information needed by the switch about a particular packet (col. 1, lines 39-52). It would have been obvious to one of ordinary skill at the time of the invention to tag the packet with a start tag (virtual start time) and a finish tag (virtual finish time) in order to convey the virtual start time of the packet to the other elements in the device.

Regarding claim 59, Yang in view of Tout does not expressly disclose implementing the method using a machine readable medium having computer executable instructions. Examiner takes official notice that it is well known in the art to use a machine readable medium having computer executable instructions to implement a method since software is very flexible. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method using a machine readable medium having computer executable instructions since software is well known as being very flexible.

8. Regarding claims 53 and 60, referring to claims 52 and 59, Yang in view of Tout discloses that the virtual clock is reset only once to zero (Yang: col. 4, lines 63-67) and is updated whenever a packet is transmitted on the node (Yang: col. 5, lines 29-50, esp. col. 5, lines 40-50).

9. Regarding claims 54 and 61, referring to claims 52 and 59, Yang in view of Tout discloses updating the virtual clock in response to the received packet being transmitted (Yang: col. 5, lines 29-50, esp. col. 5, lines 40-50), wherein the virtual clock is based, at least in part on a maximum of a time measured by the virtual clock when the received packet was transmitted and the assigned start tag of the received packet (Yang: col. 5, lines 29-50, esp. col. 5, lines 40-

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50) where “session i virtual finish time minus the session i head packet length divided by the allocated rate” is the virtual start time (Yang: col. 2, lines 26-30).

10. Regarding claims 55 and 62, referring to claims 52 and 59, Yang in view of Tout discloses assigning a finish tag based, at least in part, on the assigned start tag of the received packet (Yang: col. 2, lines 22-36 and col. 5, lines 1-27).

11. Regarding claims 56 and 63, referring to claims 52 and 59, Yang in view of Tout discloses assigning a finish tag based, at least in part, on the assigned start tag plus a scaling factor multiplied by a length of the received packet (packet length) divided by a weight of the node (packet transfer rate) (Yang: col. 2, lines 22-36 and col. 5, lines 1-27, esp. col. 5, lines 6-9) where, as broadly defined, the scaling factor is 1.

12. Claims 57 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al (USPN 5,905,730) in view of Tout et al (USPN 5,991,295) as applied to claims 52 and 59, above, and further in view of Brown (USPN 5,268,899).

13. Regarding claims 57 and 64, referring to claims 52 and 59, Yang in view of Tout does not expressly disclose that transmitting the received packet comprises: attempting to transmit the received packet; assigning a back-off interval based, at least in part, on the assigned start; and transmitting the received packet after the back-off interval has expired. Brown teaches, in a packet transmission system, that transmitting a received packet comprises: attempting to transmit the received packet (col. 1, lines 15-58 and col. 2, line 33-col. 3, line 2); assigning a back-off interval based, at least in part, on the assigned start (col. 2, line 33-col. 3, line 2); and transmitting the received packet after the back-off interval has expired (col. 1, lines 15-58 and col. 2, line 33-col. 3, line 2) in order to avoid collisions on a shared transmission medium (col. 1,

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lines 15-58 and col. 2, line 33-col. 3, line 2). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to attempt to transmit the received packet; to assign a back-off interval based, at least in part, on the assigned start; and to transmit the received packet after the back-off interval has expired in order to avoid collisions on a shared transmission medium.

Allowable Subject Matter

14. Claims 58 and 65 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose or fairly suggest determining the back-off interval using the difference between the assigned start tag and a time measured by a virtual clock at a time when an attempt is made to transmit the received packet. Rather the prior art disclose determining the back-off interval using a random number, a priority value, or the number of times a packet has collided.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.

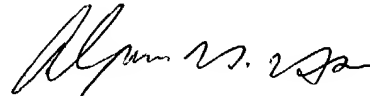
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703)308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
Art Unit 2665

^{DTJ}
Daniel J. Ryman



ALPUS H. HSU
PRIMARY EXAMINER